Defense Business Systems Technical and Test

DBS are not Weapons Systems

DBS	Area	Weapon System
Problem Statement	**Requirements**	JCIDS Capability Docs
24/7 (server) 8hrs (user	Mission	Defined Duration (sortie/72 hrs)
Process delay	Criticality	People may die
Shared w/ industry	Commonality	Unique warfighting
ROI time & money	**Measures**	Lethality/survivability
Stable processes	Conditions	Dynamic
Fixed facilities	Environment	Tactical
COTS	System	Designed and developed
BPR ✉ COTS	Development	Design to purpose
POM/Funds Cert	Funding	POM
Worldwide	**Interoperability**	Local
SW Measures	RAM	MTBF/MTTR wear & tear
Users	**Developmental Test & Eval**	Testers

Requirements/Measures

- **DBS Requirements are normally defined in the Problem Statement in terms of high level outcomes (HLO) and business outcomes (BO).**
  - Measurable High-Level Outcomes (HLOs) must be identified up-front so all stakeholders know what constitutes success.
    - HLO's are often very broad, vague, and not testable.
    - Any HLO that uses words like "improve", "reduce", etc. increase the cost of testing because additional testing is required to quantify the baseline.
  - The outcome should explicitly state the business value of the resources to be invested and to allow management to prioritize and weigh investments.
    - HLO's define long term objectives in terms of return of investment to build a business case for acquiring the DBS.
    - HLO's may not be measurable until years after full deployment.
  - BO's are also often broad and vague. Often stated as business outcomes rather than performance measures.
    - There is a trend to define KPP/KSA in the BO's
  - Corresponding measures must be specific, actionable, measureable, relevant, and timely operational capabilities that can be achieved against their corresponding outcomes.

Interoperability

- **DBS's deal with transactions. It is a primary function.**
  - It is critical to clearly define and enumerate the interface partners and interface objects.
  - Interoperability must be end-to-end. The Interface objects must be able to be transmitted and received AND acted upon to complete the transaction.
    - Interoperability between the DBS and an intermediate processor is not sufficient because that does not complete the transaction.
  - Most interface partners has developmental or test environments that can be used for testing. Involves memorandums of agreement and scheduling.
  - Architecture views are very helpful in identifying interoperability requirements and processes.

Developmental Testing (Types of DT)

- **Functional Qualification Testing (FQT): FQT is intended to verify system requirements. Ideally, FQT is structured around processes or mission threads that show an end-to-end capability being tested.**
- **Reliability Testing: Testing to identify software defects for resolution.**
- **Regression Testing: Testing to verify correction of defects**
- **Federal Financial Management Improvement Act (FFMIA) Testing: Testing to verify that the requirements of the FFMIA are being met and the system can achieve auditability certifications.**
- **Functional Role Testing: Testing to verify that operators are limited in their capabilities and authorizations based on the roles that they are given.**
- **Cybersecurity Testing: Testing to verify cybersecurity controls and provide data necessary to receive an authority to operate (ATO). The Government will conduct complementary cooperative vulnerability assessments and adversarial penetration developmental testing**
- **Scalability Testing: Testing to examine the potential impacts and performance as the user population increases to objective limits.**
- **Interoperability Testing: Testing with interface partners to ensure end-to-end interoperability of transactions.**
- **Business Process and Human Systems Integration Testing: Testing, using actual users in a quasi-operational environment, to ensure end-to-end processes can be successfully completed and intended capabilities are delivered. This is intended to get human feedback and prepare for operational testing that follows.**
- **Data Migration Testing: Testing to ensure effective migration of operational data from legacy systems to the new system.**